

AMENDMENT

In the claims:

1. (Currently amended) A system for allowing a user to perform remote vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming for one or more vehicles, comprising:

(a) an onboard unit coupled to a data bus of one of the vehicles, wherein the onboard unit is operable to exchange telemetry data with the data bus, and wherein the telemetry data is in a format native to at least one vehicle controller coupled to the data bus;

(b) an onboard-unit server that is operable to (i) exchange the telemetry data with the onboard unit via first network, and (ii) convert the telemetry data between its native format and a human readable format so as to provide converted telemetry data;

(c) a communications means coupled between the onboard unit and the onboard-unit server, wherein the communication means is operable to handle communications between the onboard unit and ~~said~~ onboard-unit server;

(d) a repository database for holding information indicative of ~~said at least one~~ or ~~more of the~~ vehicles;

(e) an application server, coupled to the onboard-unit server and the repository database, having at least one application for carrying out any of vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming, wherein the application server accesses the repository database to obtain the information about ~~said one or more vehicles so as to carry out the applications,~~

~~wherein during processing of said applications data is sent to and received from each of said one or more vehicles, and wherein the application server is operable to carry out decision processing of the at least one application as a function of (i) the information from the repository database and (ii) the converted telemetry data using data received from said one or more vehicles; and~~

~~(f) a graphical-user interface (GUI), wherein the GUI accesses said repository database to obtain a list of specific vehicles within the fleet of vehicles to select from, and wherein the GUI couples coupled to the application server via a second network, to request processing of said applications for one or more of vehicles selected from said list, wherein the graphical-user interface is operable to exchange with the at least application information associated with any of the vehicle diagnostics, vehicle monitoring, vehicle configuration, and vehicle reprogramming.~~

~~an onboard unit server coupled to said application server, wherein the onboard unit server is operable to convert data between a format understandable by the user using said GUI and a format understandable by an onboard unit coupled to the data bus of one of said vehicles;~~

~~an onboard unit coupled to a data bus of one of the vehicles, wherein said onboard unit is operable to collect data for any of said applications and operable to manage interfacing between said data bus and said onboard; and~~

~~a communications means, coupled between said onboard unit server and said onboard unit, for handling communications between said onboard unit server and said onboard unit.~~

2. (Previously presented) The system of claim 1, wherein the one or more vehicles includes at least one of the group consisting of passenger cars, light trucks, vans, heavy trucks, construction vehicles, and other moveable vehicles.
3. (Currently amended) The system of claim 1, wherein ~~said format understandable by said onboard unit couples to the data bus of the one or more vehicle~~ the telemetry data is in binary format.
4. (Currently amended) The system of claim 1, wherein ~~at least a portion of said communications means the first network~~ includes at least one path routed through the Internet.
5. (Currently amended) The system of claim 1, wherein at least a portion of ~~said the~~ communications means includes at least one communication device selected from the group consisting of the following (i) a satellite communications device, (ii) a code division multiple access (CDMA) communications device; (iii) a time division multiple access (TDMA) communications device, (iv) a wireless local area network communications device, (v) a wired local area network communications device, (vi) a wired wide area network communications device, (v) a wireless wide area network communications device.
6. (Currently amended) A system for a vehicle onboard unit, which is coupled to a data bus of a vehicle, that allows a user to perform remote vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming, comprising:

a central processing unit (CPU);

vehicle input/output (I/O) channel ports for exchanging telemetry data with the onboard unit via a first network, wherein the telemetry data is in a format native to at least one vehicle controller coupled to the data bus;

a first application program interface means, executable by the CPU, for converting the telemetry data between its native format and a human readable format so as to provide converted telemetry data;

~~user input/output (I/O) channel ports for sending and receiving communications from an application server having at least one applications, executable by the CPU, for carrying out any of vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming, wherein the at least one application server is operable to carry out decision processing of the applications using data received from said user I/O channel ports as a function of (i) the converted telemetry data and (ii) information obtained from a repository database, wherein the information is indicative of the vehicle;~~

user input/output (I/O) channel ports for exchanging with a graphical-user interface (GUI) via a second network information associated with any of the vehicle diagnostics, vehicle monitoring, vehicle configuration, and vehicle reprogramming;

~~a first-second application program interface means, executing on said executable by the CPU, for extracting a command from said communications the information received by said the user I/O channel ports from said application server, wherein said the command includes information specifying a the vehicle and at least one vehicle parameter associated with the vehicle;~~

~~vehicle input/output (I/O) channel ports for receiving and sending communications to a vehicle data bus located on said vehicle specified by said command;~~

~~a second application program interfaces means, executing on said CPU, for communicating said command, via said vehicle I/O channel ports, to said vehicle data bus thereby causing said at least one vehicle parameter to be read or changed;~~
wherein ~~said the~~ system allows the user to perform total fleet logistics via ~~said the~~ GUI interface by facilitating vehicle parameter changes, vehicle health tracking, and receipt of vehicle maintenance need indications, thus eliminating a need to physically bring ~~said the~~ vehicle to a repair, maintenance or configuration facility.

7. (Currently amended) The system of claim 6, wherein the ~~first~~ second application program interface means includes means for extracting ~~said the~~ command from one of the following types of communications received on ~~said the~~ user I/O channel ports: (i) satellite communications, (ii) code division multiple access (CDMA) communications; (iii) time division multiple access (TDMA) communications, (iv) the wireless local area network communications, (v) wired local area network communications, (vi) wired wide area network communications, (v) wireless wide area network communications.
8. (Currently amended) The system of claim 6, wherein the ~~second~~ first application program interface means includes one of the following types application program interfaces: (i) SAE J1708, (ii) SAE J1587; (iii) SAE J1939, (iv) SAE OBD II, and (v) manufacturer proprietary interfaces.

9. (Currently amended) A method for allowing a user to perform remote diagnostics, monitoring, configuring, and reprogramming for a fleet of vehicles, comprising the steps of:

accessing a repository database using a graphical user interface (GUI) via a first network, wherein the repository database provides a list of specific vehicles within the fleet of vehicles and a list of associated vehicle parameters;

selecting via the GUI (i) at least one or more of vehicles from said the list and (ii) at least one associated vehicle parameters for each of said the at least one vehicles selected;

receiving from the GUI, via the GUI the first network, a command requesting an application server to process at least one application for carrying out of any of vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming application, wherein said the command includes information specifying (i) the at least one vehicle from said list of vehicles and (ii) at least one one vehicle parameter from said the list of associated vehicle parameters;

storing said the command in said the repository database along with the time and date that said the command was received;

responsive to the command, processing the at least one application carrying out any of vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming application using an application server, wherein the application server accesses the repository database to obtain the information about said one or more vehicles so as to carry out the applications, wherein during processing of said applications data is sent to and received from each of said one or more vehicles, and

~~wherein the application server is operable to carry out decision processing of the applications using data received from said one or more vehicles;~~

~~converting for transmission to an onboard unit located on the at least one vehicle said the command from a format understandable by said the GUI to a format understandable telemetry data that is in a format native to at least one vehicle controller by an onboard unit located on said the at least one vehicle;~~

~~sending said command the telemetry data, via a wireless mobile communications system, in said format understandable by said onboard unit located on said at least one vehicle, thereby causing said the at least one vehicle parameter to be read or changed;~~

~~receiving an acknowledgment of said command from said the onboard unit, via said the wireless mobile communications system, an acknowledgment of the at least one vehicle parameter being read or changed; and~~

~~storing said the acknowledgment in said the repository database for later retrieval by said the GUI, wherein said the method allows the user to perform total fleet logistics via said the GUI interface by facilitating vehicle parameter changes, vehicle health tracking, and receipt of vehicle maintenance need indications, thus eliminating a need to physically bring vehicles within the fleet to a repair, maintenance, or configuration facility.~~

10. (Currently amended) The method of claim 9, wherein ~~at least a portion of said GUI is provided to the user via the first network~~ includes at least one path routed through the Internet.

11. (Cancelled)

12. (Currently amended) A computer program product comprising a computer usable medium having control logic stored therein for causing a computer to provide remote diagnostics, monitoring, configuring and reprogramming for a fleet of vehicles, ~~said the~~ control logic comprising:

a first computer readable program code means for causing the computer to access a repository database in order to provide to a graphical user interface (GUI) via a first network (i) a list of specific vehicles within the fleet of vehicles and (ii) a list of associated vehicle parameters associated with each of the specific vehicles;

a second computer readable program code means for causing the computer to select via the GUI (i) at least one or more of vehicles from said list and (ii) at least one associated vehicle parameters for each of said the vehicles selected;

a third computer readable program code means for causing the computer to receive from the GUI, via the ~~GUI~~ the first network, a command requesting an application server to process at least one application for carrying out of any of vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming application, wherein ~~said the~~ command includes information specifying (i) at least one vehicle from said the list of vehicles and (ii) at least one vehicle parameter from said the list of associated vehicle parameters;

a fourth computer readable program code means for causing the computer to store ~~said the~~ command in ~~said repository~~ database along with the time and date that ~~said the~~ command was received from the user;

a fifth computer readable program code means for ~~carrying out any of vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle reprogramming~~

~~application using an application server, wherein the application server accesses the repository database to obtain the information about said one or more vehicles so as to carry out the applications, wherein during processing of said the at least one applications data is sent to and received from each of said one or more vehicles, and wherein the application server is operable to carry out decision processing of the applications using data received from said one or more vehicles;~~

a sixth computer readable program code means for causing the computer to convert, for transmission to an onboard unit located on the at least one vehicle, said the command from a format understandable by ~~said GUI~~ to telemetry data that is in a format native to at least one vehicle controller understandable by an onboard unit located on said the at least one vehicle;

a seventh computer readable program code means for causing the computer to send ~~said command~~ the telemetry data, via a wireless mobile communications system, ~~in said format understandable by said onboard unit located on said at least one vehicle, thereby to cause causing said the at least one vehicle parameter to be read or changed;~~

an eighth computer readable program code means for causing the computer to receive ~~an acknowledgment of said command from said the onboard unit, via said the wireless mobile communications system, an acknowledgment of the at least one vehicle parameter being read or changed;~~ and

a ninth computer readable program code means for causing the computer to store ~~said the acknowledgment in said the repository database for later retrieval by said the GUI, wherein said the computer program product allows the user to perform~~

~~application using an application server, wherein the application server accesses the repository database to obtain the information about said one or more vehicles so as to carry out the applications, wherein during processing of said the at least one applications data is sent to and received from each of said one or more vehicles, and wherein the application server is operable to carry out decision processing of the applications using data received from said one or more vehicles;~~

a sixth computer readable program code means for causing the computer to convert, for transmission to an onboard unit located on the at least one vehicle, said the command from a format understandable by ~~said GUI~~ to telemetry data that is in a format native to at least one vehicle controller understandable by an onboard unit located on said the at least one vehicle;

a seventh computer readable program code means for causing the computer to send ~~said command~~ the telemetry data, via a wireless mobile communications system, ~~in said format understandable by said onboard unit located on said at least one vehicle, thereby to cause causing said the~~ at least one vehicle parameter to be read or changed;

an eighth computer readable program code means for causing the computer to receive ~~an acknowledgment of said command from said the~~ onboard unit, via ~~said the~~ wireless mobile communications system, an acknowledgment of the at least one vehicle parameter being read or changed; and

a ninth computer readable program code means for causing the computer to store ~~said the~~ acknowledgment in ~~said the~~ repository database for later retrieval by ~~said the~~ GUI, wherein ~~said the~~ computer program product allows the user to perform

total fleet logistics via ~~said-the~~ GUI interface by facilitating vehicle parameter changes, vehicle health tracking, the receipt of vehicle maintenance need indications, thus eliminating the need to physically bring vehicles within the fleet to a repair, maintenance or configuration facility.

13. (Currently amended) The system of claim 1, wherein ~~said-the~~ system provides total fleet logistics via ~~said-the~~ GUI interface by facilitating vehicle parameter changes, vehicle health tracking, and receipt of vehicle maintenance need indications, thereby eliminating a need to physically bring the one or more vehicles to repair, maintenance, or configuration facility.

14. (Previously presented) The system of claim 1, wherein onboard unit comprises an application module, a data-interface module, and a command module.

15. (Currently amended) The system of claim 14, wherein: ~~the at least one~~ application module is operable to (i) collect telemetry data for any of ~~said-the~~ applications, and ~~operable to (ii) manage interfacing between said-the data bus and said-the command module for collecting said-the telemetry data;~~ wherein ~~said-the~~ data-interface module is operable to manage interfacing between ~~said-the~~ data bus, and ~~said-the~~ application and command modules; and wherein ~~said-the~~ command module is operable to (i) manage the telemetry data sent to and from the onboard unit, and ~~to (ii) direct said-the telemetry data to said-the data-bus interface and application module.~~

16. (Currently amended) The system of claim 1, wherein the onboard-unit server includes a dispatcher module, a conversion module, and a communication module, wherein ~~said-the~~ dispatcher module is operable to route ~~said-the~~ telemetry data between

total fleet logistics via ~~said-the~~ GUI interface by facilitating vehicle parameter changes, vehicle health tracking, the receipt of vehicle maintenance need indications, thus eliminating the need to physically bring vehicles within the fleet to a repair, maintenance or configuration facility.

13. (Currently amended) The system of claim 1, wherein ~~said-the~~ system provides total fleet logistics via ~~said-the~~ GUI interface by facilitating vehicle parameter changes, vehicle health tracking, and receipt of vehicle maintenance need indications, thereby eliminating a need to physically bring the one or more vehicles to repair, maintenance, or configuration facility.

14. (Previously presented) The system of claim 1, wherein onboard unit comprises an application module, a data-interface module, and a command module.

15. (Currently amended) The system of claim 14, wherein: the ~~at least one~~ application module is operable to (i) collect telemetry data for any of ~~said-the~~ applications, and operable to (ii) manage interfacing between ~~said-the~~ data bus and ~~said-the~~ command module for collecting ~~said-the telemetry~~ data; wherein ~~said-the~~ data-interface module is operable to manage interfacing between ~~said-the~~ data bus, and ~~said-the~~ application and command modules; and wherein ~~said-the~~ command module is operable to (i) manage the telemetry data sent to and from the onboard unit, and to (ii) direct ~~said-the telemetry~~ data to ~~said-the~~ data-bus interface and application module.

16. (Currently amended) The system of claim 1, wherein the onboard-unit server includes a dispatcher module, a conversion module, and a communication module, wherein ~~said-the~~ dispatcher module is operable to route ~~said-the telemetry~~ data between

~~said the~~ communication and conversion modules, wherein ~~said the~~ communication module is operable to manage the telemetry data sent to and from the onboard-unit server, and wherein ~~said the~~ conversion module is operable to convert the telemetry data between its native format and a format understandable by the user using ~~said GUI and a format understandable by an onboard unit coupled to the data bus of one of said vehicles.~~

17. (Currently amended) The system of claim 15, wherein the onboard-unit server includes a dispatcher module, a conversion module, and a communication module, wherein ~~said the~~ dispatcher module is operable to route the said the telemetry data between ~~said the~~ communication and conversion modules, wherein ~~said the~~ communication module is operable to manage the telemetry data sent to and from the onboard-unit server, and wherein ~~said the~~ conversion module is operable to convert the telemetry data between its native format and a format understandable by the user using ~~said the GUI and a format understandable by an onboard unit coupled to the data bus of one of said vehicles.~~

18. (Previously presented) The system of claim 1, further including a firewall, wherein appropriate credentials are required to access to the application server and repository database.

19. (Currently amended) The system of claim 1, wherein the information indicative of ~~said the~~ at least one or more vehicles includes a vehicle identification parameter and at least one parameter that is specific to ~~said the~~ applications.

20. (Currently amended) The system of claim 1, wherein the information indicative of the ~~said~~ the at least one or more vehicle includes a vehicle identification parameter and at least one parameter that is not specific to ~~said the~~ applications.
21. (Currently amended) The system of claim 1, wherein the telemetry data sent to and received from each of ~~said the at least one or more vehicles~~ includes telemetry data specific to ~~said the~~ applications.
22. (Currently amended) The system of claim 1, wherein the telemetry data sent to each of ~~said the at least one or more vehicles~~ may contain commands for collecting data.
23. (Currently amended) The system of claim 1, wherein the telemetry data sent to each of ~~said the at least one or more vehicles may contains~~ at least one commands for setting a parameter of the vehicle.
24. (Currently amended) The system of claim 1, wherein to carry out the decision processing the application server accesses the repository database to obtain the information about the at least one or more vehicles.
25. (Currently amended) The system of claim 23, wherein during processing of the applications telemetry data is sent to and received from at least on of the vehicles.
26. (Currently amended) The system of claim 1, wherein the application server includes a web server, and wherein the GUI accesses the application server via the web server.
27. (New) The system of claim 1, wherein the elements (a)-(f) are provided by an application service provider.

28. (New) The system of claim 27, wherein the application server includes a web server, and wherein the GUI accesses the application server via the web server.
29. (New) The system of claim 28, wherein the GUI uses a web browser to access the application server.
30. (New) The system of claim 1, wherein at least elements (b)-(e) are provided by an application service provider.
31. (New) The system of claim 30, wherein the application server includes a web server, and wherein the GUI accesses the application server via the web server.
32. (New) The system of claim 31, wherein the GUI uses a web browser to access the application server.
33. (New) The system of claim 32, wherein the GUI is not provided by the application service provider.
34. (New) The system of claim 1, wherein (a)-(e) are provided by an application service provider.
35. (New) The system of claim 34, wherein the application server includes a web server, and wherein the GUI accesses the application server via the web server.
36. (New) The system of claim 35, wherein the GUI uses a web browser to access the application server.
37. (New) The system of claim 36, wherein the GUI is not provided by the application service provider.

38. (New) The system of claim 1, wherein the elements (a)-(f) are provided as a locally-based standalone system.
39. (New) The system of claim 38, wherein the application server includes a local area network (LAN) server, and wherein the GUI accesses the application server via the LAN server.
40. (New) The system of claim 39, wherein the GUI uses a browser to access the application server.